



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

SCIENCE

A WEEKLY JOURNAL DEVOTED TO THE ADVANCEMENT OF SCIENCE, PUBLISHING THE
OFFICIAL NOTICES AND PROCEEDINGS OF THE AMERICAN ASSOCIATION
FOR THE ADVANCEMENT OF SCIENCE.

FRIDAY, APRIL 14, 1905.

CONTENTS.

<i>Penetrating Radiation associated with X-rays:</i> PROFESSOR CARL BARUS.....	561
<i>The Biological Laboratory of the Bureau of Fisheries at Woods Hole, Mass., Report of Work for the Summer of 1904:</i> PROFESSOR FRANCIS B. SUMNER.....	566
<i>Albatross Expedition to the Eastern Pacific:</i> ALEXANDER AGASSIZ	572
<i>Scientific Books:—</i>	
<i>Clerke's Problems in Astrophysics:</i> PROFESSOR EDWIN B. FROST. <i>Lacroix on La Montaigne Pelée et ses eruptions:</i> ERNEST HOWE	574
<i>Scientific Journals and Articles.....</i>	578
<i>Societies and Academies:—</i>	
<i>The New York Academy of Sciences, Section of Astronomy, Physics and Chemistry:</i> PROFESSOR C. C. TROWBRIDGE. <i>Section of Biology:</i> PROFESSOR M. A. BIGELOW. <i>The Society for Experimental Biology and Medicine:</i> DR. WILLIAM J. GIES. <i>The Geological Society of Washington:</i> DR. GEO. OTIS SMITH	579
<i>Discussion and Correspondence:—</i>	
<i>The Western Sierra Madre Mountains:</i> DR. EDMUND OTIS HOVEY. <i>The Metric System again:</i> DR. W. J. SPILLMAN. <i>New American Ostracoda:</i> ARTHUR E. BEARDSLEY	585
<i>Special Articles:—</i>	
<i>The Distribution of Fresh-Water Faunas as an Evidence of Drainage Modifications:</i> DR. DOUGLAS WILSON JOHNSON.....	588
<i>Current Notes on Meteorology:—</i>	
<i>Long-range Weather Forecasts; The Low Relative Humidity of Winnipeg in Winter; Jelinek's Meteorological Instructions; Hann's Lehrbuch der Meteorologie; A New Rain Gauge; The Micro-barograph; Notes:</i> PROFESSOR R. DE C. WARD.....	592
<i>A Contemplated Magnetic Survey of the North Pacific Ocean by the Carnegie Institution:</i> DR. L. A. BAUER.....	594
<i>The Elizabeth Thompson Science Fund:</i> PROFESSOR CHARLES S. MINOT.....	596
<i>Medals and Awards of the Royal Geographical Society</i>	597

<i>Professor Wilhelm Ostwald at Harvard University</i>	598
<i>A Conference of Anatomists.....</i>	598
<i>Scientific Notes and News.....</i>	599
<i>University and Educational News.....</i>	600

MSS. intended for publication and books, etc., intended for review should be sent to the Editor of SCIENCE, Garrison-on-Hudson, N. Y.

PENETRATING RADIATION ASSOCIATED WITH THE X-RAYS.

As the following investigation is made with the aid of nuclei, certain of their properties bearing on the present subject will first have to be specified. Exhaustions are preferably made at a pressure difference (δp) just below the point (to be called *fog limit*) at which dust-free non-energized saturated air condenses without foreign nuclei. δp depends on the particular apparatus used.

1. *Fleeting Nuclei.*—Let the X-radiation to which the dust-free air is exposed be relatively weak, so that the density of ionization may remain below a certain critical value. The nuclei observed on condensation are then very small and they require a high order of exhaustion, approaching the fog-limit of non-energized air. They are usually instantaneously generated (within a second) by the radiation, so that their number is definite independent of the time of exposure. They decay in a few seconds after the radiation ceases; *i. e.*, roughly to one half their number in two seconds, to one fifth in twenty seconds in the usual exponential way. I fancy that these nuclei are what most physicists would call ions; but nevertheless the particles are not of a